

REMARKS

In response to the Office Action dated December 18, 2000, please consider the enclosed remarks.

An extension of time to respond to the Office Action up to and including June 18, 2001, is enclosed herewith.

Applicant acknowledges the misnumbering of the claims in failing to have claim numbers 32 and 33. Applicant's attorney apologizes for this misnumbering. To clarify what claims are being discussed, please amend claims numbered as 34-45 to claims numbered as 32-33. This is shown in the attached version with markings to show changes made and in the retyped version, both attached hereto. Also, please amend now claim 33 to be dependent from claim 32, which was numbered claim 35 dependent from claim 34. Also, please amend claim now 34 which was previously numbered as claim 36 to be dependent from claim 33 rather than claim 35. Also, please amend now claims 37-40, previously submitted claims 39-42, to be dependent from claim 35 rather than claim 38. Also, please amend now claim 41, previously submitted claim 43, to be dependent from now claim 37. Also, please amend now claim 43, previously submitted claim 45, to be dependent from claim 42 rather than claim 40. Also the amendments to claims 1, 23, 26 and 29 are to delete the terminology "and/or" and reword the materials of the protective layer to show that the at least two films are different from each other.

Applicant acknowledges the restriction requirement and affirms the election with traverse to claims 1-34 and 36-43 of Group I. It is respectfully submitted that claim 35 is directed to a method of making a coated article, the examination of which would not pose an extra burden on the U.S. Patent and Trademark Office. Claim 35 is one claim out of 43 claims where the other claims are classified in the Group I. Many of the references cited against the claims in Group I may possibly be cross-referenced in class 65, subclass

54, designated for claim 35 of Group II. Hence, searching would only involve one additional subclass 54 or class 65. For these reasons, the restriction requirement is traversed and withdrawal of the restriction requirement is earnestly solicited along with examination of all of the pending claims.

Previously submitted claims 1-34 and 36-43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Glaverbel (GB 2311540) and Gillery U.S. Patent 4,610,771.

Applicants respectfully traverse the rejection of claims 1-34 and 36-43 under 35 U.S.C. 103(a) and request reconsideration thereof. Applicant's claimed invention of claims 1-34 and 36-43 involves the protective layer comprised of at least two films selected from metal-containing and/or silicon-containing films as further recited in applicant's claims.

It was stated in the Office Action that the Glaverbel reference does not expressly disclose the use of two protective films. It was then stated that in the absence of evidence of its criticality, no patentable distinction is seen since it would be (sic) a matter of design choice.

It is respectfully submitted that this rejection is nothing more than an obvious-to-try rejection which is contrary to the statute. Applicant's protective layer of at least two films is selected from metal-containing films and/or silicon-containing films. There is no teaching or suggestion in either of the references to have a protective layer of a metal-containing film. This is in addition to a lack of teaching of at least two films comprising the protective layer.

The Office Action concludes by alleging that at the time the invention was made it would have been obvious to someone of ordinary skill in the art to use the zinc stannate composition of Gillery to make Glaverbel zinc stannate film. The suggestion/motivation would have been to produce a higher transmittance film.

It is respectfully submitted that any position espoused by the U.S. Patent and Trademark Office about "obvious to choose" by one skilled in the art is not an appropriate section 103 rejection. Such an approach amounts to nothing more than an "obvious to try" rejection which is contrary to the statute. The Patent and Trademark Office (PTO) has the burden of showing a prima facie case of obviousness. See In re Bell, 991 F.2d 781, 783, 26 U.S.P.Q. 2D (BNA) 1529, 1530 (Fed. Cir. 1993); In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q. 2D (BNA) 1596, 1598 (Fed. Cir. 1988). Such an obviousness rejection under 35 U.S.C. 103 is contrary to the statute; see In re Fine, 5 USPQ2d 1596 and In re Deuel, 34 USPQ2d 1210 (Fed Cir. 1995) (copies enclosed).

The Office Action acknowledges that Glaverbel fails to disclose the exact thickness ranges for the layers. Although the Office action then alleges that it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the disclosed ranges. The reason for this was given as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

The Office Action further acknowledges that Glaverbel fails to disclose the zinc stannate film has a composition of 10-90 weight % of zinc and 90-10 weight % of Tin. Although afterwards the Office Action alleges that Gillery discloses a film composition comprising multiple layers, preferably a highly reflective film such as gold, silver and copper sandwiched between metal oxide layers. Also the Office Action notes that the anti-reflection layer of Gillery comprises a metal oxide, which is preferably zinc stannate, (col. 3, lines 25-32) and that the zinc stannate film has a composition of preferably 10-90 percent zinc and 90-10 percent tin, where a zinc/tin ratio from 40:60 to 60:40 is preferred (col. 4, lines 2-7). The specificity of the

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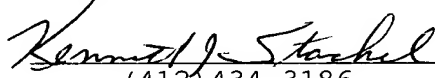
teachings of Gillery for the anti-reflection layer can not make up for the deficiency in the teachings and suggestions of the Glaverbel reference. These allegations or assertions are not properly supported for an obviousness rejection. Also they still do no teach or suggest a protective layer of at least two different films.

It is respectfully submitted that applicant's claims 1-34 and 36-43 are in condition for allowance. Reconsideration and prompt issuance of a notice of allowance is respectfully requested.

Attached hereto is a marked-up version of the amendments to the claims made by the instant amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Respectively submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claim 35 has been canceled without prejudice.

Claims 1, 23, 26, 29 and 31 have been amended as follows:

1. (Amended) An infrared reflective coated article comprising:

a substrate;

a dielectric layer sputter deposited over the substrate, the layer comprising a first zinc stannate film deposited over the substrate having zinc in weight percent range of equal to and greater than 10 and equal to and less than 90, and tin in the weight percent range of equal to and less than 90 and equal to and greater than 10, and an electrical enhancing film deposited over the zinc stannate film, the electrical enhancing film selected from the group of films consisting of zinc oxide, tin oxide film and a second zinc stannate film wherein the composition of the first zinc stannate film is at least about 5 weight percent different than the composition of the second zinc stannate film, and

an infrared reflective layer deposited on the dielectric layer,

a metal primer layer over the infrared reflective layer;

a second dielectric layer over the primer layer; and

a protective layer of at least two films selected from metal-containing and/or silicon-containing films selected from: different metals or metal and[or] silicon or metal and metal-oxy materials or metal and[or] silicon oxy-materials or silicon and metal-oxy or silicon and silicon oxy-materials or metal oxy and silicon oxy materials where the oxy materials are selected from oxides and oxynitrides and where the metal is [the same or different and] selected from a transition metal of Groups[,] 4, 5, 6 or 10 of the Periodic Table of Elements.

23. (Amended) A coated article comprising:

a substrate;

a first dielectric layer over the substrate;
a first infrared reflective layer over the first dielectric layer;
a first metal primer layer over the first infrared reflective layer;
a second dielectric layer over the first metal primer, the second dielectric layer having a first dielectric film selected from the group consisting of zinc oxide, tin oxide film and a first zinc stannate film, and a second dielectric film the second dielectric film having a composition different than the first dielectric film of the second dielectric layer;
a second infrared reflective layer over the second dielectric layer;
a second primer layer over the second reflective layer;
a third dielectric layer over the second metal primer layer; and
a protective layer of at least two films selected from metal-containing and/or silicon-containing films selected from: different metals or metal and[or] silicon or metal and metal-oxy materials or metal and[or] silicon oxy-materials or silicon and metal-oxy or silicon and silicon oxy-materials or metal oxy and silicon oxy materials where the oxy materials are selected from oxides and oxynitrides and where the metal is [the same or different and] selected from a transition metal of Groups [,] 4, 5, 6 or 10 of the Periodic Table of Elements.

26. (Amended) A coated article comprising:
a substrate;
a first dielectric layer over the substrate;
a first infrared reflective layer over the first dielectric layer;
a first metal primer layer over the first infrared reflective layer;
a second dielectric layer over the first metal primer layer;

a second infrared reflective layer over the second dielectric layer;

a second metal primer layer over the second reflective metal layer;

a third dielectric layer having a first dielectric film selected from the group consisting of zinc oxide film; zinc oxide, tin oxide film; a first zinc stannate film and a second dielectric film overlying the first dielectric film, the second dielectric film having a composition different from the first dielectric film; and

the protective layer overlying the third dielectric layer where the protective layer is at least two films selected from metal-containing and/or silicon-containing films selected from: different metals or metal and[or] silicon or metal and metal-oxy materials or metal and[or] silicon oxy-materials or silicon and metal-oxy or silicon and silicon oxy-materials or metal oxy and silicon oxy materials where the oxy materials are selected from oxides and oxynitrides and where the metal is [the same or different and] selected from a transition metal of Groups [,] 4, 5, 6 or 10 of the Periodic Table of Elements.

29. (Amended) A coated article comprising:

a substrate;

a first dielectric layer over the substrate;

a first infrared reflective layer over the first dielectric layer;

a first primer layer over the first reflective metal layer;

a second dielectric layer having a first dielectric film selected from the group consisting of zinc oxide, tin oxide film and a first zinc stannate film, and a second dielectric film overlying the first dielectric film having a composition different than the first dielectric film of the second dielectric layer;

a second infrared reflective layer over the second dielectric layer;

a second primer layer over the second reflective layer;

a third dielectric layer over the second metal primer layer, the third dielectric layer having a first dielectric film selected from the group consisting of a zinc oxide, tin oxide film and a first zinc stannate film and a second dielectric film, the second dielectric film of the third dielectric layer have a composition different than the composition of the second dielectric film of the third dielectric layer; and

the protective layer overlying the third dielectric layer where the protective layer is at least two films selected from metal-containing and/or silicon-containing films selected from: different metals or metal and[or] silicon or metal and metal-oxy materials or metal and[or] silicon oxy-materials or silicon and metal-oxy or silicon and silicon oxy-materials or metal oxy and silicon oxy materials where the oxy materials are selected from oxides and oxynitrides and where the metal is [the same or different and] selected from a transition metal of Groups [,] 4, 5, 6 or 10 of the Periodic Table of Elements.

31. (Amended) The coated article of claim [32] 30 wherein the first dielectric film of the second and third dielectric layers are each a zinc stannate film having zinc in the weight percent range of equal to and greater than 90 and equal to and less than 60 and tin in the weight percent range of equal to and greater than 10 and equal to and less than 40.

Please renumber claims 34-45 to claims 32-43 and amend the dependency of claims 35-36 and 39-42 and 43-45 in the below-indicated manner.

32. [34.] (Amended) The coated article of claim [32] 30 wherein the coated article is a transparency.

33. [35.] (Amended) The coated article of claim [34] 32 wherein the coated article is an automotive transparency.

34. [36.] (Amended) The coated article of claim [35] 33 wherein the automobile transparency is an automotive windshield having a pair of glass sheets laminated together and one of the sheets is fabricated from the substrate having the coating.

36. [38.] A coated article comprising:
a substrate;
at least one dielectric layer over the substrate;
at least one infrared reflective layer over the first dielectric layer;
optionally a first metal primer layer over the first infrared reflective layer;
optionally a second dielectric layer over a first metal primer; and
at least one protective layer selected from (A) a heat convertible metal film wherein the metal is selected from titanium, zirconium, niobium, tantalum, chromium, nickel and alloys thereof and alloys with silicon, (B) at least two films selected from metal-containing and/or silicon-containing films selected from: metal and/or silicon and metal-oxy and or silicon oxy-materials where the oxy materials are selected from oxides and oxynitrides and where the metal is the same or different and selected from a transition metal of Group , 4, 5, 6 or 10 of the Periodic Table of Elements, wherein the protective layer is located in the stack of layers to provide chemical and/or mechanical durability to the stack of layers.

37. [39.] A coated article of Claim [38] 36 wherein the dielectric layer is a first dielectric layer and the infrared reflective layer is a first infrared reflective layer and further including:

a second infrared reflective layer over the second dielectric layer;

optionally a primer layer over the second infrared reflective layer

a second dielectric layer over the primer layer; and



the protective layer is an overcoat over the second dielectric layer.

38. [40.] (Amended) A coated article of Claim [38] 36 wherein the protective layer is a heat convertible metal located on the substrate before the first dielectric layer.

39. [41.] (Amended) A coated article of Claim [38] 36 wherein the protective layer is a heat convertible metal located on the substrate before the first dielectric layer.

40. [42.] (Amended) A coated article of Claim [38] 36 wherein the protective layer is a heat convertible metal located between the first dielectric layer and the second dielectric layer below the first reflective layer.

41. [43.] (Amended) A coated article of Claim [39] 37 wherein the protective layer has at least two films in either order of metal or silicon and metal oxy material or silicon oxy material located between the second dielectric layer on the reflective layer and a third dielectric layer.

42. [44.] A coated article of Claim 1, wherein the protective layer has a thickness for the films of about 5 to about 60 Å for the metal or silicon film and about 20 to about 50 Å, for the oxy-material film.

43. [45.] (Amended) A coated article of Claim [44] 42, wherein the protective layer has a thickness for the films of 10 to about 30 Å for the metal or silicon film and 30 to 40 Å for the oxy-material film.

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